Continuous Improvement Toolkit

Control Planning

Managing Risk

PDPC

FMEA RAID Logs

Fault Tree Analysis

Risk Assessment* Decision Tree

Traffic Light Assessment

Deciding & Selecting

Pros and Cons

Importance-Urgency Mapping

Break-even Analysis

Cost -Benefit Analysis

Force Field Analysis

Voting SWOT

Pugh Matrix

QFD Matrix Diagram TPN Analysis

Kano Analysis Prioritization Matrix

Critical-to Tree Paired Comparison

Planning & Project Management*

RACI Matrix Stakeholders Analysis

PEST PERT/CPM Activity Diagram

Roadmaps Project Charter Gantt Chart

PDCA Control Planning Gap Analysis

Hoshin Kanri Kaizen How-How Diagram

Tree Diagram** Standard work

Identifying & Implementing Solutions***

Lean Measures KPIs

OEE Capability Indices

MSA RTY Descriptive Statistics

Cost of Quality

Reliability Analysis Graphical Analysis

Understanding Performance

Run Charts

Control Charts

Benchmarking

Sampling

Cause & Effect Matrix Pareto Analysis

Simulation TPM

Confidence Intervals Mistake Proofing

Probability Distributions ANOVA Pull Systems JIT Ergonomics

Understanding Cause & Effect

Hypothesis Testing Design of Experiments Work Balancing Automation

Regression Bottleneck Analysis Visual Management

Scatter Plot Correlation

5 Whys Chi-Square Test Multi-Vari Charts Flow Value Analysis 5S

Relations Mapping* SMED

Fishbone Diagram Wastes Analysis

TRIZ*** Time Value Map Process Redesign

Brainstorming Analogy SCAMPER***

Focus groups Interviews Nominal Group Technique Mind Mapping* IDEF0 Value Stream Mapping SIPOC

Photography Check Sheets

Measles Charts Surveys Affinity Diagram Attribute Analysis Flow Process Chart Process Mapping

Data Collection

Critical Incident Technique Lateral Thinking Visioning Flowcharting Service Blueprints

Observations

Creating Ideas**

Designing & Analyzing Processes

Continuous Improvement Toolkit . www.citoolkit.com

- Control Planning

❑ A single document that includes the actions, schedules and responsibilities that are needed to control the variables at their optimal settings.

❑ Assures that the improvements established will not deteriorate once the improved process is returned to the process owners.

❑ Provides monitoring and control methods to control process or product characteristics.

❑ Helps to ensure capability and stability over time.
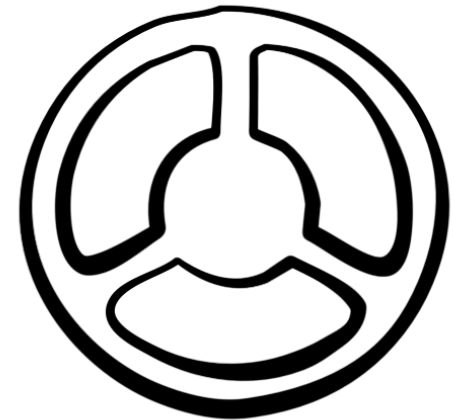
- Control Planning

It summarizes the measurement details such as:

❑ The **inputs** to be controlled

❑ The **outputs** to be monitored.

❑ Actions, schedules and responsibilities.

❑ The **controls** to be implemented such as:

- Reaction / response plan.
- What, where , when, how, etc.
- Audits.
- Mistake proofing.

- Control Planning

It could also summarize other tools measures such as:

❑ Voice of the customer and the specifications.

❑ Process mapping variables.

❑ Cause and effect variables.

❑ Process capability measures (Cpk, etc.).

❑ R&R measures.

❑ Sampling information.
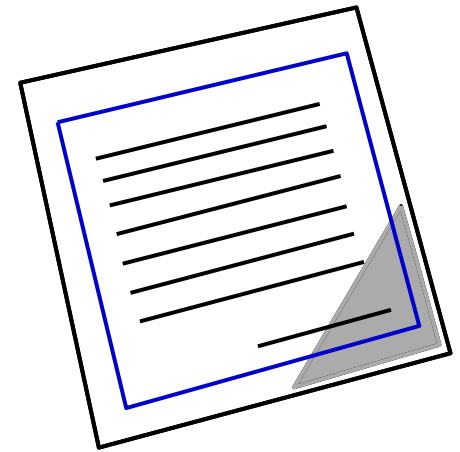
- Control Planning

The Control Plan is Updated As:

- ❑ On a regular basis.
- ❑ The design changes.
- ❑ The process changes.
- ❑ The measurement systems changes.
- ❑ The control methodologies are improved.

- Control Planning

Control Plan														
Project (Number/Name):											**Prepared by:**			
Process/Product:											**Revision:**			
Leader:											**Date:**			
	Measures		**Specifications**			**Capability**			**Measurement**			**Reaction plan**			
Process Step	KPIV Inputs	KPOV Output	Target	LSL	USL	Cpk	Sample Size	Date	Method / Freq.	R&R	Value recorded	**Who**	**When**	**Where**	**Reaction**

- Control Planning

Reaction Plan:

❑ An **action plan** specified by a control plan, FMEA, etc.

❑ It provides details of actions to be taken when a process no longer be in control.

❑ Initiated when nonconforming product or process instability is identified.

❑ Having a reaction plan will help maintaining performance levels and prevent backsliding.

❑ It could be within the control plan or can be in another document.
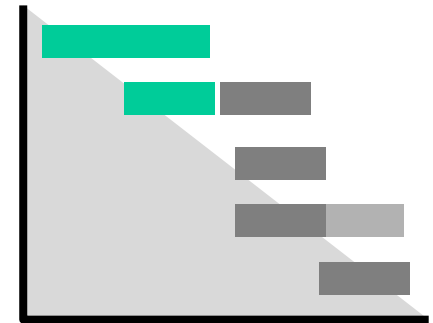
- Control Planning

Further Information:

❑ Control plans may apply to an individual part or product or to a family of similar items produced using the same process.

❑ They provide a mechanisms to minimize product and process variations.

❑ The quality of the controls is critical. If the controls fail, all the work put into the project may be wasted.

❑ When an out of specification result is recorded, the reaction plan may detail how to ensure:

- No defects will reach the customer (containment).
- How to fix the process (adjustment).